What is claimed is:

1. A triode field emission device using a carbon nanotube, comprising:

a bottom electrode formed on an insulation substrate;

an array of carbon nanotube mixture formed on the bottom electrode;

an insulating mesh gate plate having a plurality of openings corresponding to the locations of the carbon nanotube mixture, the upper part of the openings being smaller than the lower part;

an extraction electrode formed on the insulating mesh gate plate;

a top electrode formed apart from the extraction electrode with a predetermined space in between; and

a first spacer formed between the extraction electrode and the top electrode.

2. The triode field emission device as recited in claim 1, further comprising a first auxiliary electrode formed in the lower part of the insulating mesh gate plate.

3. The triode field emission device as recited in claim 2, further including a second auxiliary electrode formed on the side of the openings of the insulating mesh gate plate.

4. The triode field emission device as recited in

claim 3, wherein the second auxiliary electrode is provided to a part of the lower part of the opening.

5. The triode field emission device as recited in claim 3, wherein the voltage applied to the first and second auxiliary electrodes is the same as the voltage applied to the lower electrode.

6. The triode field emission device as recited in claim 2, further including a second spacer formed in the lower part of the insulating mesh gate plate to space out the bottom electrode and the first auxiliary electrode.

7. A field emission display, comprising:

an insulation substrate;

a bottom electrode formed on the insulation substrate;

an array of carbon nanotube mixture provided on top of the bottom electrode;

an insulating mesh gate plate having a plurality of openings corresponding to the locations of the carbon nanotube mixture, the upper part of the openings being smaller than the lower part;

an extraction electrode formed on the insulating mesh gate plate;

a top electrode formed apart from the extraction electrode with a predetermined space in between; and

a spacer formed between the extraction electrode and the

top electrode;

a fluorescent substance provided to the surface of the top electrode; and

a transparent substrate provided to the upper part of the top electrode.